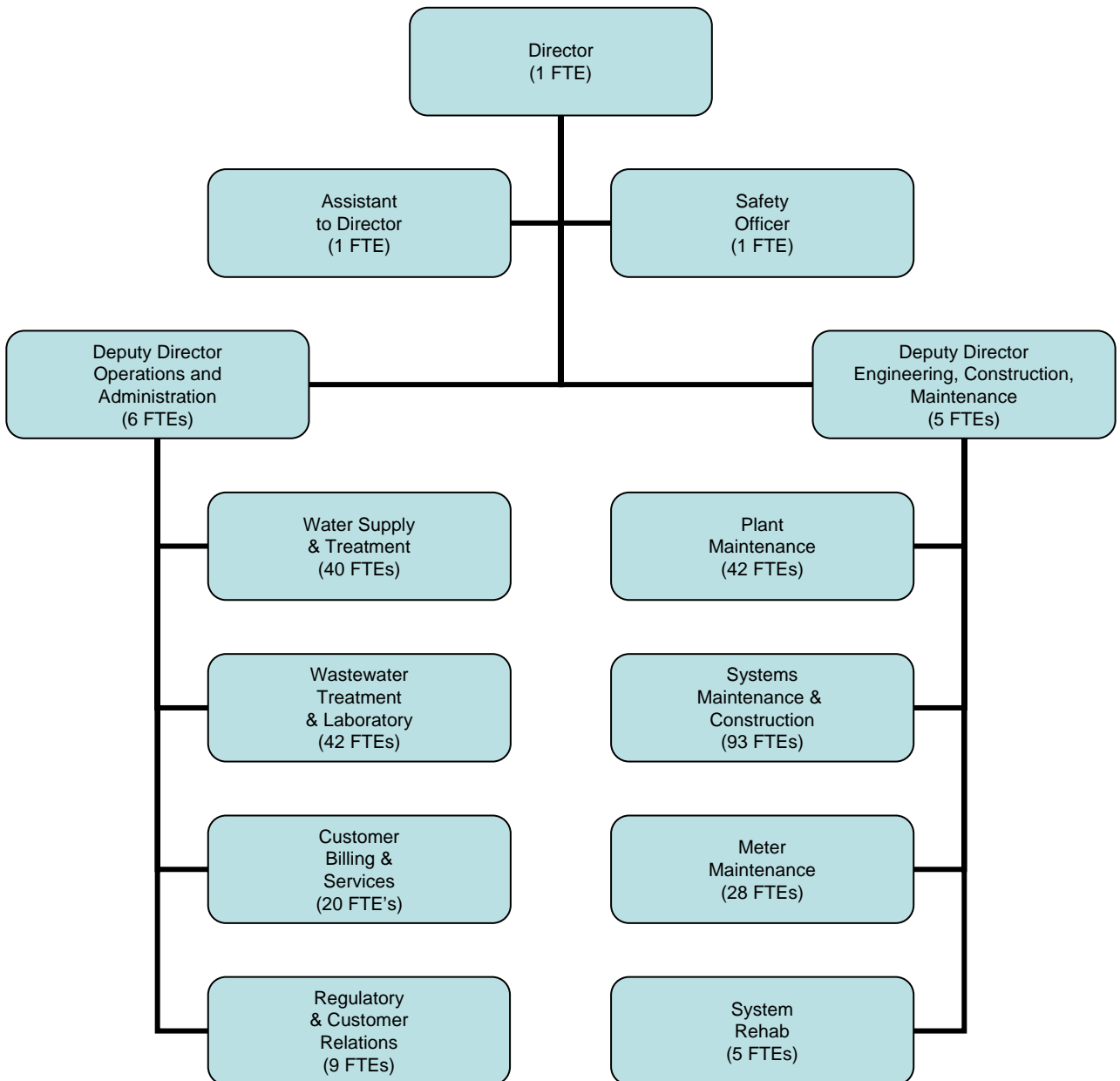




Water Management

(293 FTEs)



WATER MANAGEMENT

Mission:

To provide water and sewer services in full compliance with all legal and regulatory requirements consistent with the community's expectations for level of service and the community's values for economic development. The department provides for the protection of public health and safety through effective resource management, infrastructure maintenance, adequate fire flows, environmental protection and natural resource management.

PROGRAM DESCRIPTION

The Department of Water Management provides for the reliable operation and maintenance of water and wastewater facilities, with adequate capacities to meet essential needs to provide safe and sufficient drinking water as well as wastewater collection and treatment to protect the public health and safety. The department also provides critical, essential services necessary for the public health and safety by providing safe drinking water and water for adequate fire protection. These are ways that the department contributes to the goals of ensuring that all Durham citizens are safe and enjoy a prosperous economy and healthy environment. System security for both water and wastewater systems is important for reliable operation and the ability to meet system demands. Attention to security continues to be an integral part of operations. In this way, the department contributes to the goal that Durham citizens enjoy sustainable, thriving neighborhoods with efficient and well-maintained infrastructure. The department pursues self-evaluation, benchmarking opportunities and other sound business practices in an effort to remain competitive with other cities and utilities, while promoting a positive image for the City and the services provided. Support for expanded automation of plant operations continues with the goal of maximizing chemical and power efficiencies, even in an environment of more stringent regulatory requirements and escalating energy costs, while improving reliability and minimizing staff requirements. Efforts to develop new sources of revenue include initiatives such as landfill gas development and use, as well as contract and reclaimed water sales. The department is dedicated to supporting the goal that Durham citizens enjoy an efficient and accountable city government. Department personnel support efforts to reduce crime and its root causes through active participation in the City's "Eyes and Ears" program and by offering employment opportunities through the Strike and Re-Entry programs. Implementation of the 2005 Bond package will be a focus for the next several years and supports the goal of maintaining core services with well maintained infrastructure.

Administrative Support

<u>Administration</u>	\$1,556,196
	13.5 FTEs

Administration is tasked with the management, oversight and planning processes necessary for providing adequate water resources and treatment capacity as well as wastewater facilities to meet the needs of a growing community and providing the foundation for a prosperous economy. Personnel manage the ongoing evaluation and improvement of departmental facilities and administer a broad range of environmental programs in support of the goals that all citizens are safe, enjoy a prosperous economy and healthy environment, and that citizens enjoy an efficient and accountable city government. These efforts provide critical services to the citizens of Durham and are related to water quality, wastewater treatment and industrial activity.

<u>Customer Billing Services</u>	\$1,350,309
	20 FTEs

A core service area, this division provides billing services for the utility, responds to customer inquiries, establishes new accounts and authorizes water and sewer connections and disconnections. Employees in the field services unit provide connection and disconnection services.

<u>Regulatory Compliance, Communications and Outreach Programs</u>	\$715,582
	9 FTEs

This division is responsible for addressing regulatory compliance issues, including tracking of legislative issues, and administration of the City's Industrial Waste Pretreatment Program that enforces the City's Sewer Use Ordinance; as well as the Cross Connection Control unit, which insures the protection of the potable water system. The Water Conservation Program and other specialized departmental programs such as resource management, public education and customer outreach and information are also included in this core area.

Operations

Water Supply & Treatment

\$5,787,584

40 FTEs

This core service area is responsible for providing a safe, reliable, economical and sufficient supply of water to the citizens of Durham City and County. Through optimizing treatment processes, maximizing water transfer strategies and conducting monitoring activities, staff ensures that adequate supplies of consistently high quality drinking water are available to Durham's water customers. The Water Supply and Treatment Division (WS&T) operates and maintains two conventional water treatment facilities with a combined treatment capacity of 52 million gallons per day (MGD), and two surface water reservoirs. Service is provided by operating equipment and adjusting treatment technologies to optimize the physical and chemical processes important in effective water treatment and by selecting pumping scenarios that assure adequate supplies at economical costs.

Wastewater Treatment and Laboratory

\$8,393,371

42 FTEs

This core service area provides the citizens of Durham with cost effective wastewater treatment and residuals management. This service is accomplished by optimizing the treatment processes so that the North Durham and South Durham facilities discharge effluent of consistently high quality in compliance with State permit requirements. The North and South Durham workgroups operate and maintain state-of-the-art tertiary treatment facilities, each with a permitted capacity of 20 MGD. North Durham personnel assist with the department's monitoring activities related to landfill post closure monitoring and management of the landfill gas collection system. The Laboratory Services Section of the department, which provides lab analysis for the water, wastewater, industrial waste and stormwater programs, is also located at the South Durham Facility. This ensures that citizens enjoy an efficient and accountable city government which also protects downstream users of the waters receiving Durham's discharges and others potentially affected by residual management operations. This service area also includes wastewater treatment costs for city wastewater flows to the County wastewater treatment plant.

Maintenance Support

This core service area provides the citizens of Durham with cost effective maintenance of water and sewer infrastructure including the distribution and collection systems, raw water lake facilities, water treatment facilities, water reclamation facilities, pump stations and elevated tanks.

Systems Maintenance & Construction

\$8,980,585

121 FTEs

The Systems Maintenance & Construction division provides the routine and emergency maintenance to the City's water distribution and wastewater collection systems as well as the installation of new service lines. Typical tasks include the inspection, cleaning and repairing of water and sewer main trunk lines. This division also operates and maintains fire hydrants and water valves, as well as installing and repairing water and sewer service connections. The Meter Shop provides routine and emergency response to water meter problems, including leaks, unusual consumption rates and water pressure concerns. This group is also responsible for reading water meters.

Plant Maintenance

\$3,566,700

42 FTEs

Plant Maintenance provides all major maintenance and minor construction support for water and wastewater plants, pump stations and other facilities. They also have responsibility for long-term maintenance of the closed landfill. Expenses for support services are apportioned to the appropriate core services of water and wastewater as they relate to performance indicators.

System Rehabilitation

\$552,072

5 FTEs

System Rehabilitation provides wastewater collection system monitoring and analytical support necessary for detecting inflow and infiltration problems. The program also provides for manhole rehabilitation and replacement, supplemental flow studies and major pipeline reconstruction and renewal services for both the water distribution and wastewater collection systems.

Post-Closure Monitoring**\$198,852****0.5 FTE**

This service area provides for the monitoring and maintenance of the closed landfill and is supported by the Solid Waste Fund.

RESOURCE ALLOCATION

	Actual FY 2005-06	Adopted FY 2006-07	Estimated FY 2006-07	Adopted FY 2007-08	Change
Appropriations					
Personal Services	\$ 12,685,794	\$ 14,484,868	\$ 14,528,435	\$ 15,463,604	6.8%
Operating	11,294,367	14,461,538	17,172,844	15,483,647	7.1%
Capital	477,021	207,000	943,843	154,000	-25.6%
Debt Service	-	-	-	-	-
Transfers to Other Funds	-	-	-	-	-
Total Appropriations	\$ 24,457,182	\$ 29,153,406	\$ 32,645,122	\$ 31,101,251	6.7%
Full Time Equivalents	284	288	288	293	5
Revenues					
Water & Sewer Fund	\$ 24,298,711	\$ 28,957,520	\$ 32,450,613	\$ 30,902,399	6.7%
Solid Waste Disposal Fund	158,472	195,886	194,509	198,852	1.5%
Total Revenues	\$ 24,457,183	\$ 29,153,406	\$ 32,645,122	\$ 31,101,251	6.7%

BUDGET ISSUES FOR FY 2007-08

- No changes are made to levels of water and wastewater services. Deferment of infrastructure improvements may lead to increased costs, loss of system reliability, higher risk for public health and safety, and potential fines in the future. Escalating energy and chemical costs, which constitute a substantial portion of water and wastewater treatment costs, have significant impacts.
- Efforts to improve revenue to the utility will continue in an attempt to address insufficient CIP funding and the long-term financial health of the Water & Sewer Fund.
- Funding of infrastructure rehabilitation and replacement continues to be an issue of concern for the utility.

UNFUNDED OR UNDERFUNDED ITEMS

• Electricity – NDWRF, WS&T, SDWRF, PM	\$121,000
• Chemicals – WS&T, NDWRF, PM	\$131,100
• General Engineering – Administration	\$21,500
• Computer Upgrade – NDWRF	\$10,000
• Part Time System Rehab Project Manager	\$32,000

COMPLETED INITIATIVES FOR FY 2006-07

- Continued work with Hillsborough to develop an equity partnership for water and wastewater services.
- Began design work on a Raleigh Interconnects. Determined that a temporary service agreement with Raleigh was cost prohibitive for the City.
- Continued work on several new capital project initiatives including the Brown Water Treatment Plant expansion.
- Continued implementation associated with new utility billing system (ERP).
- Expanded program for Automated Meter Reading (AMR).
- Completed Lake Michie Dam structural repairs and began Little River Dam repairs.
- Continued water system security project improvements.
- Continued participation in AWWA Benchmarking Performance Indicators Water and Wastewater Utilities Survey.

- Completed improvements for the Methane Gas Holder project at the North Durham Water Reclamation Facility.
- Completed several major sewer rehabilitation projects.
- Began design work on the Southern Reinforcing Main, Phase I.
- Continued preliminary engineering, including submittal of the environmental assessment, on Teer Quarry.

DEPARTMENT INITIATIVES FOR FY 2007-08

- Continue work with Hillsborough to develop an equity partnership for water and wastewater services.
- Complete design on Raleigh Interconnects.
- Continue several new capital project initiatives including the Brown Water Treatment Plant Expansion.
- Complete implementation associated with new utility billing system (ERP).
- Continue expansion of Automated Meter Reading (AMR) program.
- Continue work on Little River Dam repairs.
- Continue water system security project improvements.
- Participate in AWWA Benchmarking Performance Indicators Water and Wastewater Utilities Survey.
- Implement new fees and recommendations associated with the rate study.
- Complete design of North Durham Water Reclamation Improvements for an additional aeration tank.
- Complete design on the Southern Reinforcing Main, Phase I.
- Begin engineering design for Teer Quarry.

GOALS, OBJECTIVES & STRATEGIES FOR FY 2007-08

GOAL: *To provide sufficient quantities of high quality drinking water to all of Durham's customers at the lowest possible cost.*

OBJECTIVE: Consistently deliver safe high quality drinking water to all customers.

STRATEGY: Operate and maintain the water treatment and distribution systems to minimize customer complaints and concerns regarding water quality.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
Technical Quality Complaints Per 1000 customer accounts	3.49	4.00	4.85	4.00

OBJECTIVE: To monitor annual average flows for assessment of remaining capacity as % of available capacity. Engineering of new facilities to begin when 80% of capacity is reached and construction to begin when 90% of capacity is reached.

STRATEGY: Monitor annual demands and project future raw water demands to meet system growth needs.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
Average annual demand as a percentage of raw water capacity	75.1%	<80.0%	<80.0%	<80%

OBJECTIVE: To operate the water supply and treatment facilities to minimize increases in unit cost (\$/MG) as the system demand increases and the need for infrastructure improvements increase.

STRATEGY: Optimize the water treatment process with careful monitoring and control of chemical feed equipment. Continue to minimize costs for pumping while maintaining adequate supply by using "Time-of-Day" electric rates and water transfer by hydropower.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
\$ Per MG treated	\$502	\$558	\$543	\$625

GOAL: To provide effective wastewater treatment services so that the needs of Durham's customers can be met in a cost-effective manner.

OBJECTIVE: Operate facilities in full compliance with permit requirements with zero violations.

STRATEGY: Optimize processes to minimize discharges of organic wastes and ammonia nitrogen beyond permit requirements. Success is measured by the percentage of monthly results that are below permit limits, with zero violations.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
NDWRF	94%	80%	90%	80%
SDWRF	100%	80%	100%	80%

OBJECTIVE: To monitor annual average flows for assessment of remaining capacity as % of available capacity to meet state rules. Engineering of new facilities to begin when 80% of capacity is reached and construction to begin when 90% of capacity is reached.

STRATEGY: Continue to track and analyze flows relative to system capacity. Continue efficiency improvements at both wastewater plants.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
Annual average flow demand (MG) as a percentage of plant capacity	44.7%	<80.0%	<80.0%	<80%

OBJECTIVE: To operate the water reclamation facilities to minimize increases in unit cost (\$/MG) as the system demand increases and the need for infrastructure improvements increase.

STRATEGY: Optimize the water reclamation process improvements. Continue to minimize costs by efficient energy usage strategies and effective staff deployment.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
\$ Per MG Treated	\$944	\$1,097	\$907	\$1,008

GOAL: To provide maintenance and repair of all components of the water distribution and wastewater collection systems.

OBJECTIVE: To ensure that 95% of large meters (1½ inch or larger) meet AWWA accuracy and testing frequency standards.

STRATEGY: Test the accuracy of all large meters per AWWA standards.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
% Meters tested according to AWWA recommended testing frequency	102.5%	95%	95%	95%

OBJECTIVE: To maintain sewer collection system in good condition and meet sewer permit requirements.

STRATEGY: Clean a minimum of 10% of the sewer system per year.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
% Sewer system cleaned	10.7%	10%	10%	10%

GOAL: *To provide accurate water and sewer bills to customers, meeting effectiveness and accuracy standards.*

OBJECTIVE: To provide accurate bills to customers requiring minimal corrections for erroneous bills.

STRATEGY: Perform process reporting and monitoring of accounts in order to ensure accuracy of bills mailed.

MEASURE:	Actual FY 2006	Adopted FY 2007	Estimated FY 2007	Adopted FY 2008
Billing accuracy rate per 10,000 bills mailed	99.71%	99.8%	99.8%	99.8%